

### Abstract of the Disclosure

An etching method for silicon oxide film by fluorocarbon plasma in semiconductor production, which is superior in precise manufacturing and highly  
5 selective to resist and silicon nitride film, includes generating two kinds of electronic temperature regions in plasma, and controlling a generation ratio of  $\text{CF}_2/\text{F}$  independently from a generation amount of ions by making areas of the two electronic temperature regions  
10 variable with a magnetic field gradient and a distance between a wafer and a wafer facing plane.